

TENTATIVE AGENDA AND MINIBOOK  
STATE WATER CONTROL BOARD MEETING  
THURSDAY, MARCH 8, 2007 AND  
FRIDAY, MARCH 9, 2007

Convene – March 8, 2007 – 10:00 A.M.  
Pocahontas State Park  
Dining Hall  
10301 State Park Road  
Chesterfield, Virginia

**I. Planning Session**

SWCB and DEQ Priorities and Goals  
Regulatory Process (Administrative Process Act /Advisory Committees)  
VWP Permit Program (Program Review/Permitting Process)  
VPDES Permit Program (Program Review/Permitting Process)  
Board Procedures, Expectations and Administrative Matters (Information needs, materials, timing)

Recess

Reconvene – Friday, March 9, 2007 - 9:00 A.M.  
House Room C  
General Assembly Building  
9<sup>th</sup> & Broad Streets  
Richmond, Virginia

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	Regulations Governing the Discharge of Sewage and Other Wastes from Boats	Gregory	B
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<b>V.</b>	<b>Regulatory Petition</b>		
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<b>X. Public Forum</b>		
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## ADJOURN

NOTE: The Board reserves the right to revise this agenda without notice unless prohibited by law. Revisions to the agenda include, but are not limited to, scheduling changes, additions or deletions. Questions arising as to the latest status of the agenda should be directed to Cindy M. Berndt at (804) 698-4378.

**PUBLIC COMMENTS AT STATE WATER CONTROL BOARD MEETINGS:** The Board encourages public participation in the performance of its duties and responsibilities. To this end, the Board has adopted public participation procedures for regulatory action and for case decisions. These procedures establish the times for the public to provide appropriate comment to the Board for their consideration.

For REGULATORY ACTIONS (adoption, amendment or repeal of regulations), public participation is governed by the Administrative Process Act and the Board's Public Participation Guidelines. Public comment is accepted during the Notice of Intended Regulatory Action phase (minimum 30-day comment period and one public meeting) and during the Notice of Public Comment Period on Proposed Regulatory Action (minimum 60-day comment period and one public hearing). Notice of these comment periods is announced in the Virginia Register and by mail to those on the Regulatory Development Mailing List. The comments received during the announced public comment periods are summarized for the Board and considered by the Board when making a decision on the regulatory action.

For CASE DECISIONS (issuance and amendment of permits and consent special orders), the Board adopts public participation procedures in the individual regulations which establish the permit programs. As a general rule, public comment is accepted on a draft permit for a period of 30 days. If a public hearing is held, there is a 45-day comment period and one public hearing. If a public hearing is held, a summary of the public comments received is provided to the Board for their consideration when making the final case decision. Public comment is accepted on consent special orders for 30 days.

In light of these established procedures, the Board accepts public comment on regulatory actions and case decisions, as well as general comments, at Board meetings in accordance with the following:

**REGULATORY ACTIONS:** Comments on regulatory actions are allowed only when the staff initially presents a regulatory action to the Board for final adoption. At that time, those persons who participated in the prior proceeding on the proposal (i.e., those who attended the public hearing or commented during the public comment period) are allowed up to 3 minutes to

respond to the summary of the prior proceeding presented to the Board. Adoption of an emergency regulation is a final adoption for the purposes of this policy. Persons are allowed up to 3 minutes to address the Board on the emergency regulation under consideration.

**CASE DECISIONS:** Comments on pending case decisions at Board meetings are accepted only when the staff initially presents the pending case decision to the Board for final action. At that time the Board will allow up to 5 minutes for the applicant/owner to make his complete presentation on the pending decision, unless the applicant/owner objects to specific conditions of this permit. In that case, the applicant/owner will be allowed up to 15 minutes to make his complete presentation. The Board will then, in accordance with § 2.2-4021, allow others who participated in the prior proceeding (i.e., those who attended the public hearing or commented during the public comment period) up to 3 minutes to exercise their right to respond to the summary of the prior proceeding presented to the Board. No public comment is allowed on case decisions when a FORMAL HEARING is being held.

**POOLING MINUTES:** Those persons who participated in the prior proceeding and attend the Board meeting may pool their minutes to allow for a single presentation to the Board that does not exceed the time limitation of 3 minutes times the number of persons pooling minutes or 15 minutes, whichever is less.

**NEW INFORMATION** will not be accepted at the meeting. The Board expects comments and information on a regulatory action or pending case decision to be submitted during the established public comment periods. However, the Board recognizes that in rare instances new information may become available after the close of the public comment period. To provide for consideration of and ensure the appropriate review of this new information, persons who participated during the prior public comment period shall submit the new information to the Department of Environmental Quality (Department) staff contact listed below at least 10 days prior to the Board meeting. The Board's decision will be based on the Department-developed official file and discussions at the Board meeting. For a regulatory action should the Board or Department decide that the new information was not reasonably available during the prior public comment period, is significant to the Board's decision and should be included in the official file, an additional public comment period may be announced by the Department in order for all interested persons to have an opportunity to participate.

**PUBLIC FORUM:** The Board schedules a public forum at each regular meeting to provide an opportunity for citizens to address the Board on matters other than pending regulatory actions or pending case decisions. Anyone wishing to speak to the Board during this time should indicate their desire on the sign-in cards/sheet and limit their presentation to not exceed 3 minutes.

The Board reserves the right to alter the time limitations set forth in this policy without notice and to ensure comments presented at the meeting conform to this policy.

Department of Environmental Quality Staff Contact: Cindy M. Berndt, Director, Regulatory Affairs, Department of Environmental Quality, 629 East Main Street, P.O. Box 1105, Richmond, Virginia 23218, phone (804) 698-4378; fax (804) 698-4346; e-mail: [cmberndt@deq.virginia.gov](mailto:cmberndt@deq.virginia.gov).

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**Amendment of 9 VAC 25-71, Regulations Governing the Discharge of Sewage and Other Wastes from Boats:** The staff will ask the Board to amend 9 VAC 25-71-70 to add the Lynnhaven River Watershed in Virginia Beach to the regulation listing of state designated boating “No Discharge Zones”. Boat sewage discharges are regulated by the federal government by requiring boats with installed toilets to have either sewage treatment units which treat and discharge or holding tanks that do not discharge and must be pumped out. Pump out facilities are usually located at marinas and are regulated by the Virginia Department of Health. Discharging raw sewage (from holding tanks or portable toilets for example) is prohibited by state law and the SWCB boating regulation, 9 VAC 25-71. Federal law does not allow a state to adopt regulations for boat

sewage treatment units that are more stringent than federal regulations, but it allows a state to petition EPA for designation of No Discharge Zones, where all sewage discharges, treated or untreated, are banned. The state must demonstrate that the particular water body requires special protection, that there are adequate pump out facilities in the area, and that the No Discharge Zone can be enforced. It might be noted that since untreated sewage discharges from boats are illegal, the only difference in a No Discharge Zone with respect to the law is that boats with treat and discharge units cannot use them. However, the public outreach and increased law enforcement efforts in No Discharge Zones usually provide for more protection of the waters with regard to previously undetected illegal discharges, so significant improvement can occur.

The City of Virginia Beach has requested that DEQ petition EPA to designate the Lynnhaven River Watershed as a boating sewage No Discharge Zone. The watershed is confined, experiences a great deal of boating traffic, and is listed as an impaired water body due to fecal contamination. As part of the TMDL plan to clean up the watershed, the Virginia Beach city council voted to proceed with this No Discharge Zone designation and the city has worked with the DEQ staff to develop the necessary information to submit to EPA. At its December 2005 meeting, the Board was notified of the staff's intention to seek No Discharge Zone designation, and in January 2006 a public meeting was held in Virginia Beach. Since then, in accordance with EPA regulation 40 CFR Part 140.4(a), DEQ has provided EPA with the required information, and EPA has approved the No Discharge Zone. In order to recognize the new No Discharge Zone in state regulation and provide enforcement authority under 62.1-44.33, the staff proposes to amend boating regulation 9 VAC 25-71, by adding the Lynnhaven Watershed and its boundaries to the No Discharge Zone listing in 9 VAC 25-71-70 (new language underlined). In addition, the staff is using the opportunity provided by this regulation amendment to update the federal citations in two sections to the most current federal publication as indicated in the marked up regulation. This update has no impact to our regulation since no changes have been made to the federal regulation since the last citation date of 2004.

#### **Amendments to the Water Quality Management Planning Regulation 9 VAC 25-720 using the fast track**

**process:** Staff will ask the Board to approve amendments to two sections of the Water Quality Management Planning (WQMP) regulation, 9 VAC 25-720.50.B (Potomac-Shenandoah River Basin) and 9 VAC 25-720.80.B (Roanoke River Basin). These sections were last amended at the Board's September 28, 2005 meeting. New information has been received that impacts the allocations for four dischargers in these river basins. Waste load allocations for the North River WWTF (VA0060640), Middletown STP (VA0020982) and Skyline Swannanoa STP (VA0028037), and a parameter description for the Danville City – Northside WWTP (VA0060593), are proposed for revision under provisions in the Administrative Processes Act for the fast-track rulemaking process (§2.2-4012.1). These actions are being proposed to more accurately reflect the water-quality based limits needed to protect water quality in the receiving streams of the four facilities.

1. North River WWTF (VA0060640): The following facts have lead to the proposed amendment for the Board's consideration:

- North River WWTF has requested amendments to the WQMP regulation to reflect higher CBOD5 and TKN effluent limitations at the expanded 28 MGD flow tier.
- The QUAL2E model provided at permit issuance demonstrated that the higher CBOD5 and TKN limits are protective of water quality in the North River.
- The nutrient load being discharged at the expanded flow tier is consistent with the additional waste load allocations for TN and TP that are included in Part C of the WQMP regulation for the Potomac-Shenandoah River Basin.

Therefore, the CBOD5 and TKN waste load allocations for the North River WWTF should be amended as follows:

Water Body	Permit No	Facility Name	Outfall No.	Receiving Stream	River Mile	Parameter Description	WLA	Units WLA
VAV - B23 R	VA0060640	North River WWTF	001	North River	15.01	CBOD5, JAN-MAY	<del>4030</del> <u>700</u>	KG/D

Water Body	Permit No	Facility Name	Outfall No.	Receiving Stream	River Mile	Parameter Description	WLA	Units WLA
	7.23.04	AKA Harrisonburg – Rockingham Reg. Sewer Auth.				CBOD5, JUN-DEC	<del>606</del> 800	KG/D
						TKN, JUN-DEC	<del>303</del> 420	KG/D
						TKN, JAN-MAY	<del>545</del> 850	KG/D

2. Middletown STP (VA0020982): The following facts have lead to the proposed amendment for the Board's consideration:

- Middletown STP has requested an amendment to the Water Quality Management Plan to reflect higher a CBOD5 effluent limitation at the expanded 0.4 MGD flow tier.
- The Regional Stream Model (v.4.11) demonstrated that the higher CBOD5 limit is protective of water quality in Meadow Brook.
- The nutrient load proposed for discharge at the expanded flow tier is consistent with the requirements for non-significant dischargers as described in 9 VAC 25-829-10, General VPDES Watershed Permit Regulation.

Therefore, the CBOD5 waste load allocation for the Middletown STP should be amended as follows:

Water Body	Permit No	Facility Name	Outfall No.	Receiving Stream	River Mile	Parameter Description	WLA	Units WLA
VAV - B53 R	VA0020982	Middletown STP	001	Meadow Brook	2.19	CBOD5	<del>20.8</del> 24	KG/D

3. Skyline Swannanoa STP (VA0028037): The Skyline Swannanoa STP was not included in the WQMP regulation for the Potomac-Shenandoah River Basin (9 VAC 25-720.50B) adopted by the Board at its September 2005 meeting because no water quality based effluent limits were identified at that time. The following facts have lead to the proposed amendment for the Board's consideration:

- At the time of permit reissuance in early 2006, it was determined that the original stream model (8/6/74) utilized did not consider the potential for any residual oxygen demand at the confluence of the STP's receiving stream, an unnamed tributary, with the South River.
- In-stream water quality conditions on this section of the South River were subsequently predicted by the EPA Stream Model for South River in the Vicinity of Waynesboro, Virginia dated 1976, re-verified 1984 and reviewed in 1990.
- This model had previously allocated BOD5 to four dischargers on this section of the South River (Waynesboro STP, Crompton-Shenandoah, Wayn-Tex and DuPont (now INVISTA)). Crompton-Shenandoah ceased discharging in 1984 and Wayn-Tex ceased discharging in 1992, and these two facilities were removed from the Potomac-Shenandoah Water Quality Management Plan when it was revised and adopted by the State Water Control Board on September 28, 2005.
- This left a portion of un-allocated BOD5 waste load allocation in the South River. Based on this available waste load allocation and the verification model, the limits outlined in the following table were demonstrated to be protective.

Therefore, the CBOD5 waste load allocation for the Skyline Swannanoa STP should be added to 9 VAC 25-720.50B as follows:

Water Body	Permit No	Facility Name	Outfall No.	Receiving Stream	River Mile	Parameter Description	WLA	Units WLA
VAV -	VA0028037	Skyline Swannanoa STP	001	South River UT	2.96	CBOD5	8.5	KG/D



Water Body	Permit No	Facility Name	Outfall No.	Receiving Stream	River Mile	Parameter Description	WLA	Units WLA
<u>B32</u> <u>R</u>								

4. Danville City – Northside WWTP (VA0060593): The following facts have lead to the proposed amendment for the Board’s consideration:

- By letter to DEQ dated June 12, 2006, the City of Danville requested an amendment to the Water Quality Management Plan to reflect the seasonal BOD5 effluent limitations.
- The Danville City – Northside WWTP is permitted for 30 mg/L or 2725 kg/d of BOD5 November through May. This limitation is considered secondary treatment per 40 CFR 133 and was not included in the revision of the planning regulations.
- The BOD5 waste load allocation of 1907 kg/d for the months of June through October was included since it was considered a water quality based effluent limitation. However, the parameter description erroneously indicates “BOD5” instead of “BOD5, JUN-OCT”.

Therefore, the BOD5 waste load allocation for the Danville City – Northside WWTP should be as follows:

Water Body	Permit No	Facility Name	Outfall No.	Receiving Stream	River Mile	Parameter Description	WLA	Units WLA
VA C- L60 R	VA0060593	Danville City - Northside	001	Dan River	53.32	BOD5, <u>JUN-OCT</u>	1907	KG/D

Staff plans to recommend that the Board authorize the Department to promulgate the proposed amendments to 9 VAC 25-720-50.B and to 9 VAC 25-720-80.B of the Water Quality Management Planning Regulation for public comment using the fast-track process established in § 2.2-4012.1 of the Administrative Process Act for regulations expected to be non-controversial.

**Proposed Water Reclamation and Reuse Regulation (9 VAC 25-740):** At the March meeting, the Board will be asked to approve the subject draft regulation for public comment. On April 9, 2000, the General Assembly approved House Bill 1282, which amended Sections 62.1-44.2 and 62.1-44.15:15 of the Code of Virginia. Section 62.1-44.2 now defines the purpose of the State Water Control Law to, among other things, promote and encourage the reclamation and reuse of wastewater in a manner protective of the environment and public health. Additionally, Section 62.1-44.15:15 authorizes the Board to promote and establish requirements for the reclamation and reuse of wastewater that are protective of state waters and public health as an alternative to directly discharging pollutants into state waters.

On October 3, 2002, the Board authorized a public hearing and public comment period on the referenced proposed regulation. Public comments were received from February 24 through April 25, 2003 and at a public hearing held on April 2, 2003. Upon review of public comments, it was determined by the Department of Environmental Quality, Office of Water Permit Programs (DEQ-OWPP), that a broader and more flexible regulation strategy should be developed for wastewater reclamation and reuse than that proposed in the draft regulation. Subsequently, no further action to develop the proposed regulation was taken.

As a follow up to the initial effort to develop the water reuse regulation, on September 19, 2005, DEQ-OWPP published four notices of intended regulatory action (NOIRAs), one of which was for a technical regulation on wastewater reclamation and reuse, and three for General Virginia Pollution Abatement (VPA) Permit Regulations on reclaimed water reuses. The latter general permit regulations were to reference the technical regulation. A public comment period and public meeting were held to solicit comments, which are summarized in the Proposed Regulation Agency Background Document (Form TH-02).

Due to the significant lapse of time between development of the original draft technical regulation and the NOIRA to redraft the technical regulation, and to avoid public confusion regarding two drafts of the technical regulation, the agency recommended that the Board withdraw the originally proposed draft Regulation for

Wastewater Reclamation and Reuse (9 VAC 25-740) for which the Board had previously authorized a public hearing and public comment period on October 3, 2002. On September 27, 2005, the Board voted unanimously to support this recommendation.

A Technical Advisory Committee (TAC) consisting of a broad range of stakeholders was formed to assist the agency in the development of the reuse regulations. The TAC convened seven times over a twelve-month period to discuss the regulations. Based upon TAC deliberations, DEQ decided to drop the development of the General Permits and rather regulate generators and distributors of reclaimed water through existing VPDES and VPA Permit Programs. Per the proposed regulation, permitted providers of reclaimed water would be required to establish service agreements or contracts with end users that contain requirements in the regulation applicable to the intended reuse of the reclaimed water. This is similar to the concept of service agreements for sewerage or public water supply. If it is evident after adoption and implementation of the proposed regulation that there is need for the agency to regulate end users or specific groups of end users, General VPA Permits for end users will be reconsidered at that time.

During the development of the regulation, the TAC and DEQ staff worked through numerous issues. Two subcommittees of the TAC were organized specifically to address disinfection and nutrient issues, which had proven contentious in the last effort to draft the regulation. This resulted in more operationally practical treatment standards and supplemental irrigation rates for reclaimed water. While the TAC reached agreement on most issues regarding the regulation, areas on which members of the TAC still differ include: public and livestock access exclusion periods following irrigation with Level 2 reclaimed water; design, construction, operation and maintenance requirements for system storage and a specific category of non-system storage for reclaimed water; discharge restrictions for all storage facilities of reclaimed and reject water; and accounting for nutrient losses transferred from a point source (i.e., a wastewater treatment plant discharge) to a non-point source via reclaimed water reuse (i.e., bulk and non-bulk irrigation). These remaining areas will benefit from additional public comment.

**Frederick-Winchester Service Authority-Opequon Water Reclamation Facility, Petition for Revised Nutrient Waste Load Allocations in 9 VAC 25-720 (Water Quality Management Planning Regulation):**

Staff will recommend that the Board deny a petition from Frederick-Winchester Service Authority (FWSA), which requests increased total nitrogen (TN) and total phosphorus (TP) waste load allocations under the Water Quality Management Planning (WQMP) Regulation (9 VAC 25-720) for their Opequon Water Reclamation Facility (WRF). The facility's nutrient allocations are currently based on a permitted design flow of 8.4 million gallons per day (MGD); FWSA claims that the existing infrastructure for biological treatment is more appropriately classified as 12.6 MGD, and therefore, merits a higher allocation. Staff believes that the hydraulic capacity throughout the existing facilities only warrants use of 8.4 MGD as the design flow in calculating nutrient waste load allocations. FWSA recently revised their petition, reducing the requested increase of their nitrogen allocation, based on amending the WQMP regulation to include a footnote making the new allocation contingent upon completion of their expansion to 12.6 MGD capacity by December 31, 2010. In addition to the Opequon facility, FWSA also operates the Parkins Mill facility. Under the recently issued Watershed General Permit they have the option of aggregating the allocations for these facilities. Staff believes that under the existing, aggregated allocation, both of these facilities will be able to fully utilize their expanded plant capacities by efficiently operating the nutrient removal technologies they plan to install. Therefore, staff does not favor moving forward with the request by FWSA for a higher allocation at the Opequon facility.

FWSA has an option to complete the expansion-upgrade work necessary to request a re-rating of the plant and issuance of a Certificate to Operate (CTO) for a 12.6 MGD design flow. In fact, per their petition, "FWSA is in the design construction process for the previously deferred hydraulic improvements". If the CTO is secured prior to December 31, 2010, FWSA may petition the Board for revised waste load allocations pursuant to 9 VAC 25-720-40.

Staff believes if a request for a higher allocation is based upon a plant expansion, then this section of the regulation envisions the basis for such a request is actual accomplishment of the expansion by December 31, 2010, not just submission of a projected schedule for such expansion. The petitioner believes this approach does not provide assurance that FWSA can use the entire capacity of the expanded plant since they are not certain the Board will increase their allocation once a CTO is issued for the plant expansion. Staff believes this concern is

unfounded for two reasons. First, under the Nutrient Credit Exchange Program dischargers that expand may secure offsets from other point sources or non-point sources to help achieve their nutrient allocations, thereby allowing them full use of their treatment capacity. Second, FWSA has additional flexibility compared to many other dischargers since in addition to the Opequon facility, FWSA also operates the Parkins Mill facility. Under the recently issued Watershed General Permit they have the option of aggregating the allocations for these facilities. Staff believes that under the existing aggregated allocation, both of these facilities will be able to fully utilize their expanded plant capacities by efficiently operating the nutrient removal technologies they plan to install at each plant.

**Merck - Petition for Revised Nutrient Waste Load Allocations in 9 VAC 25-720 (Water Quality Management Planning Regulation):**

Merck submitted a petition in January 2007, requesting increased total nitrogen (TN) and total phosphorus (TP) waste load allocations (WLAs) under the Water Quality Management Planning (WQMP) Regulation (9 VAC 25-720) for their pharmaceutical production plant located in the Shenandoah basin. Based on a design flow of 1.20 MGD for internal outfall 101 (process wastewater only; excludes storm water and non-contact cooling water), the facility's nutrient allocations are currently:

- TN = 14,619 lbs/yr; based on annual average concentration of 4.0 mg/L
- TP = 1,096 lbs/yr; based on annual average concentration of 0.30 mg/L

Merck requests the WLAs be revised to:

- TN = 43,835 lb/yr (29,216 lbs/yr inc.); based on annual average concentration of 12.0 mg/L
- TP = 4,384 lb/year (3,288 lbs/yr inc.); based on annual average concentration of 1.20 mg/L

Merck's request reflects discharge levels that are technically feasible using Biological Nutrient Removal (BNR) treatment technology, considering limitations caused by unique characteristics of the plant's pharmaceutical wastewater and their understanding of the State's implementation strategy requiring comparable nutrient reduction from all dischargers (i.e., industrial plants achieve a level-of-effort equivalent to similarly situated POTWs) and that industrials would be considered on a case by case basis, because concentration-based performance requirements and technologies appropriate for POTWs aren't always applicable to industrials. Merck has conducted scientific and engineering studies on nutrient reduction treatment options and has provided the results of these supporting studies to DEQ. Compared to current discharge loads, the proposed treatment levels achieve approximately 85% reduction in the TN load and 80% reduction in the TP load, at an estimated cost of \$5 million for capital improvements and an annual operating cost of \$1 million. The proposed reduction levels are comparable to the treatment requirements assigned to the Shenandoah basin POTWs (Enhanced Nutrient Removal; about 80-85% reduction from current discharge concentrations, down from 19 mg/L to 4.0 mg/L for TN and 2.5 mg/L to 0.3 mg/L for TP).

At the Board's 9/21/05 meeting, nutrient waste load allocations (WLAs) were adopted in the amended WQMP Regulation (9 VAC 25-720) for significant dischargers in the Shenandoah-Potomac, Rappahannock, and Eastern Shore Basins. At a subsequent meeting on 11/15/05, the Board adopted nutrient WLAs for the remaining significant dischargers in the York and James Basins, thus completing the assignment of annual nitrogen and phosphorus load allocations for the Bay watershed's significant dischargers. The basis for calculating nutrient WLAs was a combination of each plant's existing permitted design flow, or expanded capacity anticipated to be certified for operation by December 31, 2010, coupled with stringent nutrient reduction treatment.

At the November 2005 meeting the Board also authorized the DEQ Director to receive any petition requesting amendment of the adopted nitrogen or phosphorus WLAs on the Board's behalf and, upon completion of the public comment period on the petition, if the recommendation would be to initiate a rulemaking, the Director was authorized to take that action. The Director was not authorized to deny a petition for rulemaking.

By letter dated January 8, 2007, Mr. Stephen E. Tarnowski, Merck's Assistant Counsel for Safety & Environmental Law, requested: ". . . that the Board amend 9 VAC 25-720 such that it provides the Elkton Plant with a total annual nitrogen mass load allocation of 43,835 lb/year based on an average concentration of 12.0 mg/L and a total annual phosphorus allocation of 4,384 lb/year based on an average concentration of 1.2 mg/L. Both of these allocations are based on an average flow of 1.2 MGD."



The rulemaking to assign nutrient WLAs in the amended WQMP Regulation began in January 2004 and concluded in late 2005. Nutrient WLAs for the Merck plant were first proposed based on 10.09 MGD (outfall 001, final surface water discharge), TN = 3.13 mg/L, and TP = 0.5 mg/L. This was of concern because the final discharge was known to include storm water and non-contact cooling water, which were to be excluded under the final regulation, but this was the only monitoring point being used at the time for the discharge. Fortunately, Merck's VPDES permit was being reissued to include nutrient monitoring at internal Outfall 101, which accounts for just the treated process wastewater. Merck commented on this during the rulemaking in an 8/22/05 letter: *"The maximum design flow of the treatment plant is 1.2 MGD. . . Calculate and propose revised nutrient waste load allocations based on the correct design flow and 4.0 mg/L total nitrogen and 0.3 mg/L total phosphorus, or other defensible nutrient concentrations to be determined."* The final WLAs for Merck used these factors, and are currently 14,619 lbs/yr for TN and 1,096 lbs/yr for TP.

Merck informed DEQ in early 2006 that it intended to perform a "treatability" study, giving consideration to the unique characteristics of the plant's pharmaceutical wastewater and the technical feasibility of BNR performance, which would provide a nutrient reduction level-of-effort comparable to the treatment requirements being placed on the Shenandoah's municipal POTWs. Based on the results of the studies, Merck will need to invest ~\$5 million in capital improvements with an additional ongoing operating cost of ~\$1 million per year to control TN and TP discharges. These are initial estimates based on today's pricing and don't reflect the value of reduced capacity at the facility (installing BNR will reduce COD removal capacity by about 40%). The nutrient reduction investment equates to ~\$9 per pound of TN reduction and ~\$12 per pound of TP reduction. With the installation of BNR, Merck will achieve ~85% reduction in TN load and ~80% reduction in TP load (further reduction is currently achieved through offsite shipment of TP to Hopewell WWTP; the actual overall TP reduction for Merck, through a combination of BNR and offsite shipment, is ~94%).

The petition information was published in the Virginia Register on February 5, 2007, and the public comment period will close on February 26, 2007. A summary of the comments and letters of inquiry received to date are as follows:

1. Gary Scott, NCATS, LLC – Hopes that DEQ does not amend Merck's waste loads to the level being requested; concerned that we will continue to be challenged in our efforts to save the Chesapeake Bay if we allow industries to increase discharges.
2. Robert S. Wilson, P.G., One Environmental - The Shenandoah is sick, contaminated by nutrients, mercury, and PCBs; more than 1,300 miles of rivers and streams in the watershed fail to meet federal clean water standards. Already an abundance of TN and TP – the result of industrial agriculture, land development, and manufacturing. Careful scientific studies were used to establish allowable discharge control limits and they must be adhered to. Merck's request to radically increase the carefully determined discharge limits – a 300% increased tonnage for TN and a 400% increased tonnage discharge for TP is not appropriate. Requests the following: 1. Find petition insufficient; 2. Document waste generation; 3. Verify treatment claims with third party review.
3. Lorraine Potter - request that Merck go before a public hearing in order to alter their pollution discharge. The Chesapeake watershed is too critical to have increases made at this time.
4. Jeff Kelble, Shenandoah River Keeper – asked to be kept informed of any petition that Merck presented requesting a change in their current nutrient waste load allocations. Provided with copies of Merck's petition and all supporting documents.
5. Mike Gerel, VA Staff Scientist, Chesapeake Bay Foundation – requested copy of the petition submitted by Merck and all supporting documents. Intends to submit comments, but won't be able to based on the level of information in the Response to Petition for Rulemaking document.

**Issuance of VPDES Permit No. VA0092029 - Irvine & Irvine, LLC, Rockbridge County:** The purpose of this agenda item is to determine the appropriate action regarding the issuance of VPDES Permit No. VA0092029. The applicant, Irvine & Irvine, LLC, has applied for issuance of a Virginia Pollutant Discharge Elimination System (VPDES) Permit to authorize the discharge of treated wastewater from a treatment plant serving an existing bed & breakfast inn and restaurant. The facilities are currently served by an on-site system approved by the Health Department, but the owner is proposing to expand his operations beyond the capacity of the on-site system. The public notice for the proposed issuance was published in the News Gazette on October 4

and October 11, 2006. During the public comment period of the draft permit, the agency received 64 comments from citizens objecting to the issuance of this permit. Seven of those requested a public hearing. The Valley Regional Office was also contacted by Delegate Ben Cline, Mr. Harvey Hotinger (Chairman of the county Board of Supervisors), and Mr. Sam Crickenberger (county Planning Director) for information about the permit. On November 16, 2006, a public meeting was held, at DEQ's request, to provide information to the concerned citizens and answer questions. Forty-one citizens, the applicant, and DEQ staff attended. Based on the staff's review of the comments received, a public hearing was scheduled.

A public hearing was held on February 1, 2007, with approximately 15 citizens in attendance, plus the applicants and their consulting engineer. Mr. Shelton Miles III served as the hearing officer. Mr. Irvine and his engineer indicated that between the publishing of the draft permit and the date of the hearing, they had communicated extensively with the concerned citizens and worked together to resolve their concerns. By the time of the hearing, those originally opposed to the discharge were satisfied that the proposed treatment system would be designed to minimize a direct discharge to the stream under normal circumstances, and that on those occasions when it does discharge, it would treat to a high enough standard to minimize environmental and health risks. The applicant proposes to install a system that will use ultraviolet disinfection rather than chlorination, and constructed wetlands to optimize evapotranspiration of the treated wastewater. Three other citizens also provided oral comments. All of those commenting supported the draft permit. In addition, one of the citizens who spoke presented a written document in support of the discharge signed by 18 of the downstream neighbors.

The staff recommends that the Board authorize the issuance of VPDES Permit No. VA0092029, as presented for public comment, with the following revisions made as discussed at the public hearing:

- Eliminate Part I.B. – Total Residual Chlorine Effluent Limitations and Monitoring Requirements. This section was in the version of the draft permit available during the public notice comment period, but was removed following the hearing.
- Add Part I.C.10. – Facility Components – The plans and specifications for the construction and installation of these wastewater treatment facilities shall include the use of ultraviolet irradiation for effluent disinfection and the use of a constructed wetland following the point where effluent is to be monitored for permit compliance purposes.

**Issuance of VPDES Permit VA0091511 - Rappahannock Westminister – Canterbury:** Rappahannock Westminister- Canterbury (RWC), located in the Irvington area of Lancaster County, is a residential healthcare facility that manages wastewater generated by activities related to operation of the retirement community. Presently, wastewater is applied to a 14.5 acre spray field authorized by Virginia Pollutant Abatement (VPA) permit number VPA01401. The current design flow capacity of the treatment works and spray field is 50,000 gallons per day (gpd). This system is reaching the end of its useful life. On December 29, 2003, DEQ-PRO staff received an application for a new Virginia Pollutant Discharge Elimination System (VPDES) discharge permit (#VA0091511) for an expanded 80,000 gpd wastewater treatment facility that would discharge to an intermittent non-tidal unnamed tributary of Old Mill Cove in the Rappahannock River watershed. A draft permit was written to combine VPA provisions, which will still be needed while the new proposed discharging plant is being constructed, with requirements that will protect water quality downstream of the discharge. A watershed general permit has been applied for in order to comply with Chesapeake Bay nutrient regulations. After meetings with the Virginia Health Department – Division of Shellfish Sanitation (DSS), a requirement for a second disinfection step and additional detention time has been added to be extra protective of the shellfish downstream. This measure has allowed DSS to not institute a prohibited zone (where shellfish harvesting could not be relayed to approved waters for self- purification) within a portion of the currently condemned area.

A public notice of the draft permit was initially published in the Rappahannock Record on December 22, 2005 and on January 5, 2006. Forty-three (43) persons provided comments during the 30-day period following the first December 2005 publication date in the Rappahannock Record. Based on the comments received, DEQ concluded there was significant public interest and substantial, disputed issues relevant to the issuance of VPDES permit VA0091511 to Rappahannock Westminister-Canterbury. The DEQ Regional Director concurred, and approved the holding of a public hearing. Notice of a public hearing was combined with public notice of the current revised draft permit, and was published in the Rappahannock Record on

January 4 and 11, 2007. Copies of the notification of the location, date and time of the public hearing were sent to all of the previous commenters.

Two public hearings were held, one in the afternoon and one in the evening, with Mr. Robert H. Wayland III as the hearing officer. Ninety-seven people attended the hearings; 80 signed in at the afternoon session and 17 were present for the evening session. Fourteen people spoke during the afternoon session and two people provided comments at the evening hearing (one spoke during the afternoon also but did not duplicate his comments). Of the 14 commenters during the afternoon hearing, 6 were in favor of the proposed project and 8 were against it. At the evening hearing, one commenter approved of the proposed project and one spoke against it. The public comment period will remain open until 4 PM on February 23, 2007. The staff will be asking the Board to decide whether to issue the permit as a result of comments received during the public hearing.

A synopsis of issues raised follows:

1. Local land use and regional wastewater planning issues.

- The rural character of the area will go away with new densities brought by the expansion of RW-C. Further expansion at RW-C should not be allowed at local expense; the Northern Neck cannot support more people moving in.
- Property values should not be allowed to be impacted by this discharge.
- If RW-C gets too big, it will fail, like other facilities have in this area.
- If the system is abandoned, how will closure be accomplished?
- The approval of the application would weaken interest in providing proper sewage services to White Stone and Irvington and should be denied on that basis.

Staff Response: Land planning and land use concerns are local issues that DEQ does not have the authority to address. The proposed design flow for the RW-C treatment system does not subject this facility to Financial Assurance (9VAC 25-650-10 et seq.) requirements; however, facility closure plans for treatment works treating domestic sewage are addressed by the Sewage Collection and Treatment Regulations (9VAC 25-790-10 et seq.). The proposed permit boilerplate includes language that requires the permittee to notify DEQ of any planned changes at the facility, which would include closure, and allow DEQ sufficient time to notify the permittee of state closure requirements.

2. Alternative options to a surface water discharge to Old Mill Cove

- RW-C should re-cycle its wastewater.
- The existing spray field irrigation system should be renovated and used.
- RW-C has put options on purchasing more land, so additional acreage should be available for land application of the wastewater to address RW-C's proposed expansion.
- RW-C has been associated with Sedona Development, which has been renovating and operating the Tides Inn and the Tides Lodge. This discharge should be combined with others on Carter's Creek and piped to the Rappahannock River.
  - Lancaster County should revise its Comprehensive Plan to allow construction of a sewer line from the Kilmarnock Wastewater Treatment Plant to RW-C.
- Should the wastewater from the RW-C facility go to the Kilmarnock Wastewater Treatment Plant, both creeks end up in the Chesapeake Bay.

Staff Response: DEQ acts on the application that is submitted and develops performance criteria (i.e. permit limits) that will protect water quality. This leaves the option for how those limits will be met to the owner. The current no-discharge system recycles wastewater and would require extensive renovation and additional land that the owner apparently wishes to put to other use. The proposed permit includes a wastewater reclamation and reuse re-opener in case the proposed "Regulation for Wastewater Reclamation and Reuse" (9 VAC 25-740) is passed and additional protections must be added to this permit for the current no-discharge system.

3. Treatment plant construction and operation concerns

- The proposed system needs to withstand major storm events; for example, a recurrence of Tropical Storm Ernesto.
- A licensed and certified sanitarian should inspect the existing system and any new construction. Unforeseen problems or malfunctions of the proposed system could cause pollution in Old Mill Cove and affect wildlife and aquatic life in the fragile ecosystem.
- The permit should be explicit in requiring the applicant to install ultraviolet (UV) disinfection.

- The proposed treatment system is desirable because it is a state-of-the-art system.
- The proposed treatment system is experimental, with no assurances it will work.

Staff Response: State design specifications require that sewage treatment plants be designed to accommodate the 25-year, 24-hour frequency storm. A special condition is included in both the current VPA permit, and the proposed VPDES permit, that prohibits a point-source discharge from the existing no-discharge (spray irrigation) system, except in the event of a 25-year, 24-hour or greater storm. NOAA data shows the 25-year, 24-hour storm for the Irvington area as represented by 6 to 7 inches of rainfall. By comparison, Tropical Storm Ernesto dropped between 5 and 10 inches of rain on Virginia over a three-day period in September 2006. The ability of the proposed system to handle a 25-year 24-hour storm event will be evaluated during the Plans & Specification approval process, which occurs after permit issuance.

The proposed permit requires the facility to meet Class I Reliability, which is the most stringent category designated by the SCAT Regulations. Reliability is a measurement of the ability of a component or system to perform its designated function without failure or interruption of service. Requirements are in place for a backup electrical generator and critical equipment. In addition, reliability is built into the system through the double disinfection requirement. The proposed permit also requires a Class III operator to supervise the operation of the wastewater systems and to sign the monthly reports submitted to DEQ. This classification is overseen by the Department of Professional and Occupational Regulation.

#### 4. Water quality concerns in Old Mill Cove and downstream in Carter's Creek.

- The tidal flow in Old Mill Cove and other coves to Carter's Creek are not sufficient to avoid stagnation; they do not flush. Algae will result, which will consume oxygen, and problems will arise from chlorine, bacteria, nitrogen and sludge in the discharge.
- No other bacteria, other than fecal coliform, is required to be monitored.
- Approval of the proposed discharge permit will damage Old Mill Cove or Carter's Creek downstream and is not in conformance with current nutrient regulations or recommendations by the Chesapeake Bay Foundation.
- Damaging Carter's Creek will not improve water quality in the Rappahannock River or the Chesapeake Bay.
- Carter's Creek is important as a spawning ground.
- Chlorine, as a disinfectant, is lethal to aquatic life.
- The federal government and the EPA are still addressing damages due to nearby vineyards and the overflow of pond water and sediment from the winery tents during Tropical Storm Ernesto. The effects of a sewage discharge on Old Mill Creek are expected to be worse than these non-point source stormwater discharges. RW-C should guarantee that no solids will be discharged, and should post a bond to ensure that no erosion will occur.
- The discharge is proposed for a ditch in confluence with a stream that runs through the Fisher dump and an old sand pit, which would impact water quality.
- A discharge to a dry ditch would allow for seepage into the shallow aquifer.
- Carter's Creek had oysters in the past and many residents currently raise oysters to purify the water. The discharge should not be allowed to impact shellfish resources.
- Effluent standards should exceed water quality standards, not meet them.
- The proposed wasteload allocations for total nitrogen and total phosphorus should not be changed.
- The proposed permit should not contain "NLs" (No Limit) on the monitoring page.
- The permit file contains a August 25, 2005 U.S. Fish and Wildlife Service letter that raised concerns with the Clean Water Act relating to discharging to headwater & intermittent streams. The USFWS concerns do not appear to have been resolved.
- If the discharge is allowed, background ambient sampling should be undertaken to demonstrate whether the discharge will have a positive or negative impact on Old Mill and Carter's Creeks.

Staff Response: DEQ has modeled this discharge and proposed permit limits that are among the most stringent that DEQ authorizes. These limits are regarded as self-sustaining limits, meaning that water quality standards will be maintained in the stream without the benefit of dilution or mixing. No sludge is allowed to be



discharged in any waterway, and total suspended solids are limited to levels commensurate with expected ambient conditions.

The proposed permit requires that sludge handling be in accordance with DEQ regulations and that a sludge management plan be submitted for DEQ approval within 120 days of the completion of construction.

A zero wasteload allocation is proposed for both total nitrogen and total phosphorus, in accordance with current agency guidance for the Chesapeake Bay. The proposed permit includes “NLs” (No Limits) for the reporting of component parameters that cumulatively make up total nitrogen (where the TN annual load is limited), or for the reporting of interim values used to calculate a calendar year average limitation.

Fecal coliform is limited by the proposed permit to address VDH-Division of Shellfish Sanitation (DSS) concerns regarding downstream shellfish harvesting areas. Fecal coliform is an indicator parameter of bacteria from the intestinal tract of mammals. If it is absent, it is generally assumed by health organizations that other pathogens are also absent. If the facility does not use chlorine as a wastewater disinfectant prior to discharge, the proposed permit also limits another bacteria parameter, *E. coli*. The limits in the proposed draft permit have been assigned to be protective of water quality and the biota that live in the creek.

Carter’s Creek currently has been assigned a condemned rating for shellfish. The DSS originally indicated that a new discharge at RW-C would result in the need for a prohibited zone to be designated within that condemned area (where shellfish harvesting could not be relayed to approved waters for self-purification). Following discussions with the DSS, the draft permit was revised to require additional disinfection and detention of the wastewater. The VDH-DSS subsequently approved the revised draft permit on November 6, 2006, and stated that no prohibited zone would be necessary. This is the only such plant in the DEQ - Piedmont Region with this design in order not to impact shellfish resources. DSS and DEQ sample the water quality in Carter’s Creek but not at the point of discharge of the proposed project.

With regard to the August 25, 2005 U.S. Fish and Wildlife Service (USFWS) letter that raised concerns with the Clean Water Act over discharging to headwater & intermittent streams: the USFWS did not identify any threatened or endangered species that would be affected by the proposed discharge. Consequently, the applicability of this issue toward the protection of T&E species is regarded as moot for this specific case, since no aquatic federal or state T&E species would be affected.

5. Miscellaneous comments that oppose the proposed permit.

- Some long time residents on Carter’s Creek stated they just oppose the project without giving any reason.
- DEQ notification of this project was inadequate. Notifications (of application receipt) to adjacent landowners were not made available to owners further downstream. Some commenters did not see the publication of the public notice in the newspaper.
- No matter how clear the water is, it is still wastewater.
- Is the permit the right thing to do, even though it is the letter of the law?
- It would be a win-win situation to deny the permit: the applicant has publicly stated they did not want to be in the wastewater treatment business, the plant is experimental, and a number of people are opposed to it.

Staff Response: The RW-C proposal satisfies the law, and a draft permit was prepared in accordance with law and current guidance.

6. Miscellaneous comments that approve of the proposed permit

- Approval of project was recommended based on RW-C being an underappreciated asset to the community, and to enable RW-C to continue to serve the community and fulfill the demand for care facility living.
- The proposed discharge is the most feasible alternative, as RW-C was forced by timing into taking independent permit action while preferring to connect to the Kilmarnock Wastewater Treatment Plant. However, connection to Kilmarnock is not possible, since Kilmarnock cannot provide wastewater service outside the town limits.
- How did the subdivision Hills Quarters get central sewerage service when it is just up the road from RW-C?
- DEQ should provide support so RW-C can eliminate its individual wastewater plant.
- Recent public meetings concerning this project were professionally handled.



- RW-C's wastewater system will be state-of-the-art and not a detriment to the environment. It was developed with concurrence of all interested agencies.
- Shellfish are being wiped out due to disease, not pollution.
- RW-C's proposal will limit pollution in the environment.
- The real threat to water pollution in the area is PVC pipes from clothes washers, stormwater, and failing septic systems; not the discharges from wastewater treatment plants. RW-C would be a controlled system.
- The discharge of pharmaceuticals is more of a problem from baby boomers taking certain drugs, e.g., for depression. There may be fewer such problems with the RW-C discharge than elsewhere in Lancaster Co.
- RW-C, as a non-profit employer depends on maintaining the rural character of the area. The proposed wastewater system will exceed the standards of DEQ, DSS and the Chesapeake Bay Act, and will result in a net increase in water quality in Carter's Creek.
- Two thirds of RW-C residents are "independent livers;" all have made a substantial investment to live at RW-C and want to be good neighbors and stewards to the environment.
- The proposed permit is not the most desirable choice, which is to go to the Kilmarnock wastewater treatment plant. But one must protect oneself by having the permit. No one wants to harm Carter's Creek.

Staff Response: No comment.

**Issuance of VPDES Permit No. VA0091961, Locust Grove Town Center WWTP, Orange County:** On April 3, 2006, Kenneth and Lora Dotson submitted a VPDES Permit application for a proposed 0.02 mgd STP to serve the Locust Grove Town Center. If constructed, the facility will serve a commercial center consisting of retail shops, offices, and a restaurant. Discharge will be to an unnamed tributary of Flat Run, a tributary to Lake of the Woods and the Rapidan River. The proposed plant will be located at 32301 Constitution Highway in Locust Grove, Virginia. Operations at this location are currently served by an on-site underground sewage disposal system and a pump and haul operation. Notice of the proposed permit issuance was published in the Orange County Review newspaper on September 7 and 14, 2006. The public notice comment period ended on October 9, 2006. DEQ received 31 comments. The Regional Director authorized a public hearing on October 31, 2006. Notice of the Public Hearing and comment period was published in the Orange County Review newspaper on November 16 and 23, 2006, and all respondents to the original public notice were sent written or e-mailed notification of the public hearing. The hearing was held at 7:30 p.m. on January 4, 2007, in the Lecture Room of the Germanna Community College in Locust Grove, Virginia; Ms. Komal Jain was the hearing officer. A question and answer session began at 6:30 p.m. The second public comment period ended on January 22, 2007. In total, 153 individuals provided comments and most are opposed to the issuance of the permit.

The following is a summary of the comments staff received for the draft permit. They are organized into nine general categories. Following each comment is staff's response.

**A. Impacts to water quality and aquatic life**

1. The receiving stream has zero flow during the summer months. The receiving stream would consist entirely of the discharge. The permit does not acknowledge that the tributary is a low flow stream that is dry at times. Stagnation and puddling of the effluent will occur.

Response: The low flow of the stream is zero and this is clear in the Fact Sheet. In cases like this, effluent limits are developed so as to support the applicable in-stream water quality standards at the point of discharge. If the receiving stream were to have flow in it at all times, the effluent limits would likely be less stringent.

2. The discharge would adversely affect the Chesapeake Bay.

Response: The permit, as drafted, requires effluent limits that are designed to protect the water quality standards of Flat Run as well as Lake of the Woods and the Chesapeake Bay. The permit was prepared in accordance with state and federal regulations and applicable practices and guidance.

3. Sludge from the proposed sewage treatment plant will cause the growth of more weeds in the lake.

Response: The proposed sewage treatment plant will be designed to discharge only the liquid portion of the sewage. Discharge of sludge into the receiving stream is prohibited.

4. The present water quality of Lake of the Woods and the Rapidan River are deficient. Further potential pollutants can only exacerbate the fragile conditions of these waters.

Response: DEQ has no monitoring data for Lake of the Woods or its tributaries to show that they are not meeting water quality standards. The discharge is low in volume and the permit has been prepared to protect the unnamed tributary and therefore, Lake of the Woods and the Rapidan River.

5. Nitrogen limits are needed to ensure nutrient pollution does not aggravate conditions within the area of concern.

Response: The recent amendment to the State Water Control Law controlling discharge of nutrients does not require total nitrogen limits for discharges of this size. The permit does limit TKN but staff has no water quality basis to limit total nitrogen.

6. Phosphorus discharged by the sewage treatment plant will accumulated in the lake and degrade the quality of the lake.

Response: There are not regulations directly requiring phosphorus limits for discharges of this size. A limit of 2.0 mg/l for phosphorus was placed in this lake based on best professional judgment of staff to protect the water quality of the stream and lake.

7. Biological indicators should be examined to determine if the receiving stream is suitable to receive this discharge. The biological population of the receiving stream before and after the construction of the STP should be studied.

It is not the agency's practice to conduct biological assessments prior to developing a permit. A check for endangered species is conducted and this stream is not listed as having any. The water quality criteria are developed to protect sensitive species. Effluent meeting these criteria will not harm the indigenous organisms.

8. This system will not treat for hormones.

Response: The discharge of pharmaceuticals is not a likely concern for this facility since unlike most STPs it will not be serving residential homes but commercial operations. DEQ and the USEPA have yet to determine if and how to handle pharmaceutical byproducts in treated effluent. We recognize that there are pharmaceuticals in treated effluents and these may impair some aquatic communities. However, given the large number of sewage treatment plants currently discharging in Virginia, we have yet to see impacts necessitating changes to permit procedures.

9. A strong precipitation event will clean the bed of the receiving stream. Contaminates will travel to the lake in a concentrated form.

Response: Sewage effluent does not contains settleable solids, only suspended solids (TSS). The draft permit contains a TSS limit three times more stringent than that required by technology requirements. We do not believe there will be any appreciable levels of pollutants settled in the streambed to be scoured during rain events. The permit has been drafted to meet all applicable water quality standards at the point of discharge. Therefore, this discharge should not adversely affect the water quality of Lake of the Woods

10. How will the permit protect against the discharge of metals, petroleum products, and other chemicals?

Response: The commercial development that the sewage treatment plant will serve does not include industrial sources. The permit contains a condition requiring the owner to know and track the sources to the STP and to notify DEQ should any of the sources change the nature of the influent.

11. Since the collection system from the sewage system serving Lake of the Woods is already dumping sewage into the lake, DEQ should not allow further discharges to the lake.

Response: The draft permit requires effluent that is much cleaner than the raw sewage that overflows the collection system and will not contribute to any problems caused by the overflows.

12. In the future EPA and others will discover they were wrong. It will be found that the level of pollutants is not acceptable and much stricter parameters must be met.

Response: VPDES permits must be reissued every five years and DEQ may apply more stringent discharge limits to permits in the future. New laws and information often require changes and this is a common occurrence in the evolution of technology and regulations.

#### B. Water quality monitoring

13. Who will be responsible for monitoring effluent destined for the lake, and at what frequency will the county monitor this operation?

Response: The permit requires the effluent to be monitored by a licensed operator hired by the permittee. Monthly monitoring reports must be submitted to DEQ-NRO.

The DEQ water compliance staff will monitor the effluent during routine inspections. Inspection frequency is determined on the basis of risk. If the facility is found to have compliance problems, the frequency of DEQ inspections will increase.

14. The frequency and type of effluent monitoring in the permit are not stringent enough. More monitoring is needed due to the low flow of the stream. The frequency of phosphorus sampling should be increased to weekly during the first year of the permit to ensure that the lake is protected from excessive nutrients.

Response: Monitoring frequencies and types placed in the permit are in accordance with the VPDES Permit Manual and with sewage treatment plants of similar size.

15. The Lake of the Woods Association must conduct additional water testing of the lake to ensure that the well-being and safety of residents. Who will pay for the increased monitoring?

Response: DEQ does not believe monitoring of the lake is necessary because of this discharge. Increasing the frequency of citizen monitoring of the lake is a voluntary option that the Lake of the Woods Association can pursue. The Lake of the Woods Association may elect to contact DEQ to obtain grant money to conduct monitoring.

#### C. Impacts to human health

16. The public swims and fishes in Lake of the Woods. In the summer, water does not flow over the spillway. Sewage discharge into the lake would remain for a period of time. Fish in the lake may not be suitable for consumption.

Response: The permit protects all beneficial uses of the receiving stream, including human health criteria, primary contact (swimming), fishing, and aquatic life. Likewise, the permit protects all the beneficial uses of Lake of the Woods.

17. Are the levels of pollutants discharged acceptable to protect human health?

Response: In accordance with the water quality standards, the draft permit contains requirements to protect all the beneficial uses of the receiving stream and in particular, human health. The effluent is required to be disinfected to a level that allows primary contact (swimming) in the receiving stream. There are over 1,000 sewage treatment plants discharging in Virginia, most with permit conditions less stringent than those in this permit, and it is DEQ and VDH experience in overseeing these discharges that the public health is protected.

18. Effluent purity should be held to the same standard as water in a reservoir. The lake at the Lake of the Woods development has been considered as a reserve source of drinking water for the Lake of the Woods Development during periods of drought.

Response: The limits in the draft permit would apply if the discharge were to a public water supply.

19. Wells are in close proximity to the receiving stream. How will they be affected by this discharge?

Response: The soils in the area are high in clay and therefore the effluent should not percolate to the groundwater. The reason the applicant is seeking a VPDES permit is because the soils will not percolate. If effluent did reach the groundwater, it would be cleaner than that originating from septic systems, which have a much lower level of treatment and reliability.

20. No public information has been provided regarding the possible danger to families, homes, streams, or lakes affected by the wastewater discharge.

Response: In preparing limits and conditions for the permit, the regulations require, through the water quality standards, the protection of human health and the environment in general.

#### D. Concerns regarding impacts to agriculture and wildlife

21. The receiving stream passes through many properties. Landowners do not have confidence that the water is safe for vegetation.

Response: As stated above, the permit protects all beneficial uses of the receiving stream, including off stream uses such as irrigation; no impact to vegetation is anticipated.

22. Wildlife, pets, and livestock use the receiving stream as a drinking water source.

Response: The water quality criteria are designed to protect organisms that live in the water. Staff has not reason to believe that the effluent will harm livestock or wildlife that drink the water or any off-stream use.

23. The discharge point could be subject to erosion and retention of the discharge effluent.

Response: The permit requires that construction of a sewage treatment plant be in accordance with the Virginia Sewage Collection and Treatment Regulations. These regulations state that the sewage outfall shall be designed and constructed to protect against the effects of erosion, flood waters, tides, ice, boating and shipping, and other hazards, and to insure structural stability and freedom from stoppage.

E. Concerns with the design of the sewage treatment plant

24. What chemicals will be used at the STP?

Response: Since the sewage treatment plant design has not been approved, DEQ does not have an inventory of specific chemicals that will be used at the proposed sewage treatment plant. Typically, a treatment plant of this size will use bleach and lime.

Per the Sewage Collection and Treatment Regulations, chemicals used in the sewage treatment process shall be compatible with the treatment works unit operation and have no detrimental effect upon receiving waters. DEQ will require that the Operations and Maintenance Manual for the facility contain a chemical inventory (description and quantity) and a description of spill prevention measures used.

25. This plant will be built with as little expense as possible with no provision for redundancy of power supplies and backup equipment. Little attention is given to hazards analyses, addressing vehicular accident consequences, lightening strikes, vandalism protection, etc.

Response: The sewage treatment plant must be designed to meet the requirements of the Sewage Treatment and Collection Regulations. Further, this permit requires that this facility be designated as Reliability Class II. Reliability Class II facilities must have an alternate utility source feed or on-site power generator equipment. The back-up power source must be sufficient to operate all components vital to wastewater treatment during peak wastewater flow conditions.

26. Is it possible to build a treatment system that disposes of all waste, not just solid waste? The liquid waste is still being discharged into Flat Run.

Response: Currently, the methods of disposal available for liquid waste from a sewage treatment process are discharge to a waterbody and surface (irrigation) or subsurface land application (septic system). The owner can choose to use land-based irrigation to dispose of the effluent generated by the treatment works. However, this is done at the owner's discretion. Effluent discharged to the receiving stream in accordance with this permit will not compromise the water quality standards.

27. The design flow of the sewage treatment plant is too great for its intended use. The capacity of the sewage treatment plant may be increased in the future. Homes and farms will be connected to the system for a monthly fee. There should be a permanent cap on the design flow and limit allocations.

Response: DEQ staff has drafted the permit using the design flows that the permittee has requested. Any request for an increase in sewage treatment plant capacity must be approved by DEQ and handled using the same public notification procedures as that used during a permit issuance.

28. A Schaeffer system should be installed at this location.

Response: DEQ staff cannot dictate the type of sewage treatment plant to be installed at this location. Any sewage treatment plant that will serve this location must meet the limits proposed by the permit and the requirements of the Sewage Collection and Treatment Regulations.

29. The proposed sewage treatment plant will create an undesirable odor.

Response: The facility must be operated in accordance with both the VPDES Regulation and the Sewage Collection and Treatment Regulation. Both regulations require an O&M Manual that addresses specifics of the facility and compliance with the regulations. The O&M is required for the operation of the treatment system as well as routine preventive maintenance requirements to ensure compliance with the practices and procedures of the permit. Parts of these requirements involve the control of odors.

30. Deep overflow pits should be installed to handle runoff overflow from the proposed sewage treatment plant.

Response: The sewage treatment plant designed to serve this location will be required to meet the requirements of the Sewage Collection and Treatment Regulations.

31. DEQ has not properly investigated the quality of water in the lake and how it can be adversely impacted in the event of plant failure. If the plant were to fail, the result would be long-term detrimental results for the



receiving stream and the lake. What would happen if the plant was to fail, and what would be the contingency plan?

Response: As stated previously, the sewage treatment plant will be designated as Reliability Class II. With an alternate utility source feed or on-site power generator equipment, the plant should not permanently or unacceptably damage or affect the receiving waters or public health during periods of long-term interruptions.

If a discharge from a permitted facility is found to violate 9 VAC 25-31-50 of the VPDES Permit Regulation (discharge not in compliance with the permit), the facility is required to notify DEQ immediately, but no later than 24 hours after discovery of the noncompliance.

Should catastrophic failure occur, the commercial operations would have to close; water quality effects would be short term since sewage effluent is biodegradable.

#### F. Operation and maintenance of the sewage treatment plant

32. There will be days when the discharge standard is not met. The developer can blame the rest of drainage basin for water quality problems. DEQ is not going to be able to distinguish problems created by this system from those created by the sewage disposal system for Lake of the Woods or livestock.

Response: The permittee is responsible for sampling the effluent at the point of discharge. This will ensure that any violation of permit limits is detected at the time of discharge. Sewage discharge to Lake of the Woods originating from the malfunctioning of the sewage collection system for Lake of the Woods can be distinguished from discharge from the proposed Locust Grove Town Center Sewage Treatment Plant by examination of the monitoring data at the point of discharge from the proposed sewage treatment plant.

Additionally, the permit requires in-stream monitoring of the receiving stream be conducted during the summer months.

33. What are the qualifications of the person who will be charged with operating this system?

Response: This permit requires that the sewage treatment plant be staffed by a Class IV Wastewater Works Operator licensed by the State of Virginia.

34. What is the experience of the owner of this system for successful operation of similar systems?

Response: The permit applicants are not a Class IV Wastewater Works Operator. They will be responsible for obtaining one to operate the facility.

35. The proposed sewage treatment plant should have an operator on staff 24 hours per day.

Response: The Sewage Collection and Treatment Regulation recommends staffing of four hours per day. Staff sees no reason to require 24 hour staffing.

36. What is the history of performance of the system being considered for approval? Is it used in other locations? If so, for what period of time and what has been its performance?

Response: The sewage treatment plant design has not been received by DEQ for review. Any sewage treatment plant design received must be able to meet the requirements of the permit and must be approved by DEQ prior to construction.

37. Will the sewage plan be owned and operated by an entity that can accept financial responsibility for any plant failure? Can the permit be transferred to an entity with less financial resources to protect the original permittee? The permittee should be required to post a bond to cover damages due to the plant failures.

Response: DEQ regulations do not require that a bond be posted for an STP that serves commercial operations. If the permittee fails to operate the sewage treatment plant in accordance with all applicable laws and regulations, they will be subject to enforcement. The commercial operations may have to cease operation or the sewage shall be required to be removed by a pump and haul operation.

38. There is a long term risk in granting a developer a permit to release treated wastewater. When the developer is finished developing, he has little incentive to maintain the sewage treatment facility. Often the developer defaults on his permits and the county and DEQ are left to resolve the problem. There have been serious problems with privately run sewage treatment systems in northern Virginia.

Response: If the permittee fails to operate the permit in accordance with all applicable laws and regulations, they will be subject to enforcement actions and the establishments may have to cease operation or the sewage shall be required to be removed by a pump and haul operation. DEQ-NVRO has not experienced a higher level of failure with privately owned sewage treatment works.



39. Orange County and the Rapidan Service Authority should be working together to meet the sewer needs of the county. Monies dedicated to this facility should be better used in aiding RSA extending its facilities to serve this customer.

Response: DEQ has no authority to require the county or the authority to act on this matter.

40. The permittee does not have to construct this sewage treatment plant to meet the sewage disposal needs of the strip mall. Alternative sewage disposal options include connection to the Rapidan Service Authority (RSA) system, the Wilderness STP, construction of a sewage treatment plant built to RSA standards and operated by RSA, removal of the sewage created by the strip mall by a pump and haul operation, or retention of the existing leach fields.

Response: DEQ can not require an alternative analysis. However, staff understands that the applicant has explored other options. Further, it is our experience that people only apply for a VPDES permit when there are no other viable alternatives available to them.

41. Many small sewage treatment plants may be constructed in the area near the junction of Routes 20 and 601 in Orange County. These small sewage treatment plants would meet minimal standards that may be less stringent than those proposed for this sewage treatment plant.

Response: Issuance of permits and construction of new sewage treatment plants must be approved by DEQ and staff will assess accumulative impacts on water quality. The public would be notified of any pending permit issuance. Any new permits would be drafted to protect water quality standards. DEQ staff would evaluate the nutrient impact to the watershed if proposals to construct several small sewage treatment plants were received within a small time frame.

G. Economic impact from construction of this sewage treatment plant.

42. Contamination of the lake could substantially erode the tax base of Orange County.

Response: Staff does not believe the discharge will have any impact on the water quality of the lake since there will be no loss of use of the lake. Further, the permit protects all beneficial uses of the receiving stream and the lake.

43. Why were additional building pads constructed prior to the application for the VPDES permit?

Response: Building permits are issued by the local jurisdiction. DEQ is not involved in this process.

44. Who is ultimately responsible for damage to water supply, health, and property as a result of this facility?

Response: A permit does not remove liability from the owner of the facility; an individual may seek restitution should they be affected by the facility. Since the permit was prepared in accordance with state and federal regulations and applicable practices and guidelines, staff believes the permit is also protective of public health and local groundwater quality. Water quality should not be a basis for damage to property.

45. DEQ has taken action to control sewage problems at Lake of the Woods. Residents of Lake of the Woods will have to absorb the increase in sewage rates to control sewage problems with the collection system. Residents of Lake of Woods do not deserve to be the recipient of that waste water from this proposed sewage treatment plant.

Response: Actions taken by DEQ to control sewage problems at Lake of the Woods were conducted in accordance with the State Water Control Law to protect human health and the lake. Likewise, this permit has been prepared using the same laws and regulations and will be protective of Flat Run and Lake of the Woods.

I. Impact to the Lake of the Woods dam

46. What safeguards are being proposed in the design of the facility that will protect Flat Run and the dam wall of the lake during flood conditions?

Response: The dam at Lake of the Woods should be able to pass the "Probable Maximum Flood". The size of the watershed draining to Lake of the Woods is about 7 square miles. A ½ inch rainfall in this drainage area is about 60 million gallons of water. The proposed discharge volume will have no impact on the dam.

H. Public notification

47. The majority of the homeowners in eastern Orange County do not read the Orange County Review. The notice should have been published in the newsletter for Lake of the Woods.

Response: The notice was published in accordance with the VPDES Permit Regulation. Not all persons affected by this permit reside in Lake of the Woods. Therefore, the notice was published in a local paper that is available to all citizens of Orange County.

48. The only method to obtain complete information is by appointment at the DEQ office in Woodbridge.

Response: The public may contact DEQ by telephone, mail, or e-mail. The public request information can be sent to the public via e-mail or mail.

49. There was inadequate media coverage of the proposal for construction of this sewage system.

Response: All riparian landowners were notified of the proposed discharge via mail in July and August 2006. Public notice was given in accordance with regulation and it is up to the media to decide what they wish to cover.

We have reviewed all comments and we believe the draft permit has been prepared in accordance with all applicable regulations and agency practices. Further, we believe that the effluent limits and conditions in the permit will protect the water quality standards of the receiving stream and Lake of the Woods.

One modification to the draft permit is proposed. The applicant has requested that an interim flow tier of 0.01 mgd be added to the permit in the event they chose to build the 0.02 mgd plant in two phases. The concentration limits are the same for both design flows.

**Proposed Action on a Request to Conduct an Aquatic Life Use Attainability Analysis for Straight Creek submitted by the Virginia Coalfields Total Maximum Daily Load Group:** Staff will ask the Board to act on a request from the Virginia Coalfields Total Maximum Daily Load Group to conduct an aquatic life use attainability analysis ["UAA"] for Straight Creek, in Lee County. Based on staff review of the request and public comment received, staff believes that conducting a UAA for Straight Creek should proceed subject to certain conditions, consistent with EPA procedures, and in accordance with a schedule consistent with implementation of reasonable and cost-effective best management practices identified in the approved TMDL Implementation Plan for Straight Creek.

Straight Creek was first listed as impaired in 1998 due to a moderately impaired biological community and excessive counts of fecal coliform bacteria. Early in 2006 the Virginia Department of Mines, Minerals, and Energy ["DMME"] and DEQ completed TMDLs for both of the Straight Creek impairments. For the biological impairment, the primary pollutants identified by the TMDL were excessive total dissolved solids and sediment. Sources of these pollutants were identified as extensive disturbed areas in the watershed resulting from surface mining, straight pipes from domestic dwellings, and unstable stream banks.

Due to concerns raised about the benthic TMDL, staff negotiated a cooperative solution with coal industry representatives that incorporated the following into the final TMDL for Straight Creek:

1. The Virginia Coalfields TMDL Group accept the TMDL TDS endpoint represented by 334 mg/l
2. The TMDLs will not specify point source TDS reductions because of the lack of TDS data for the discharges. TDS monitoring of the discharges will occur during the permit cycle. After two years, the TDS data will be evaluated to determine if TDS

reductions are needed in the TMDLs. If TDS reductions are needed, the TMDL would enter the public outreach process for revision and possible amendment.

3. The TMDL reports will specify growth opportunities.

The Board approved submittal of these TMDLs to EPA in March 2006, and EPA approved them in June 2006.

In July 2006, House Bill 1457 was enacted to amend § 62.1-44.19:7 of the Code of Virginia (Plans to Address Impaired Waters). The amendment is as follows:

*If an aggrieved party presents to the Board reasonable grounds indicating that the attainment of the designated use for a water is not feasible, then the Board, after public notice and at least 30 days provided for public comment, may allow the aggrieved party to conduct a use attainability analysis according to criteria established pursuant to the Clean Water Act and a schedule established by the Board. If applicable, the schedule shall also address whether TMDL development or implementation for the water should be delayed..*

A UAA is a structured scientific assessment of the factors affecting the attainment of the use. A UAA study must also ensure that downstream and existing uses are protected and analyze what uses are attainable after implementing effluent limits under §§ 301b and 306 of the Clean Water Act and by implementing **cost-effective** and **reasonable** best management practices for non-point source control. All of these requirements are listed in the federal and state water quality standards regulations (EPA 40 CFR 131.10 and Virginia 9 VAC 25-260-10).

In October, 2006, DEQ received from the Virginia Coalfields TMDL Group ["Group"] a document titled "Reasonable Grounds Documentation to Conduct an Aquatic Life Use Attainability Analysis for Straight Creek, Lee County, Virginia". This documentation asserts that attainment of the designated use for aquatic life is not feasible because many of the impacts on the watershed are irretrievable. The document also states that the Group anticipates taking the lead role in TMDL Implementation Plan development.

Pursuant to § 62.1-44.19:7 of the Code of Virginia, a notice of public comment period was published in the Virginia Register on October 5, 2006. The comment period ended November 9, 2006. The Notice stated that the Board was seeking comment on the documentation submitted and if it constitutes reasonable grounds that attainment of the aquatic life use for Straight Creek is not feasible.

Comments from thirteen groups were received. The comments are polarized with the environmental organizations urging DEQ to demand more objective information from the Group. They also expressed concern that the aquatic life use is an existing use which cannot be removed.

The regulated community asked the Board to move forward and allow the UAA to be conducted.

DEQ staff held a meeting on January 26, 2007 with those who commented and the Group to allow for further explanation of the proposal and discussion of comments. Based upon that meeting, the Group provided additional information on February 2 to supplement their initial submission.

DEQ staff agrees that an existing use cannot be removed. However, a UAA study can help to more precisely define what the existing use is. In addition, for this case no one is advocating the removal of the aquatic life use, but rather what level of aquatic life use in Straight Creek can be supported and whether a subcategory of the aquatic life use may be more appropriate.

DEQ and DMME staff believes that implementation of cost-effective and reasonable best management practices as well as improvements in operational practices for permitted facilities will result in significant restoration of water quality conditions in Straight Creek. The agencies thus have some concerns about conducting a UAA for Straight Creek at this time, prior to any corrective actions having been implemented following the TMDL. At the same time, the agencies concur that there is some degree of uncertainty with respect to the level of aquatic life use that can be supported by Straight Creek.

Since this is the first submittal pursuant to the amendment of § 62.1-44.19:7, DEQ has not yet established criteria for determining what constitutes "*reasonable grounds indicating that the attainment of the designated use for a water is not feasible.*" However, the agencies are prepared to accept the "Reasonable Grounds" document and work with the Group and stakeholders to evaluate the aquatic life use in Straight Creek, given certain safeguards and a schedule that acknowledges the need for corrective actions in the watershed. The results from this study process will provide information to DEQ about aquatic life use in Straight Creek and will also help in defining the framework for future UAA studies. However, staff believes that moving forward with this study is not establishing any precedent for what constitutes "reasonable grounds" under § 62.1-44.19:7.

Staff proposes the Board grant approval, subject to the conditions listed below, for the Virginia Coalfields TMDL Group to conduct a use attainability analysis for aquatic life in Straight Creek according to criteria established pursuant to the Clean Water Act and in conformance with 9 VAC 25-260-10.

1. A TMDL Implementation Plan to address the aquatic life use impairment shall be submitted to DEQ by December 31, 2007 and approved by the Board. The Plan must identify the reasonable and cost-effective remediation steps required for a minimum measure of use attainment under 9 VAC 25-260-10 E and I.
2. A UAA study plan shall be presented for public comment and approved by DEQ before initiation of the UAA study.
3. On-going implementation of cost-effective and reasonable best management practices identified in the TMDL Implementation Plan and VPDES permits shall continue so the response of the aquatic system to the implementation of these practices is included in the UAA study.
4. Upon completion of the UAA study, DEQ staff will report back to the Board whether the results of the UAA study are deemed consistent with federal and state regulations and warrant initiating a rulemaking to establish subcategories of the designated use for aquatic life in all, or portions of, Straight Creek.

5. Moving forward with this study does not establish any precedent for what constitutes "reasonable grounds" under § 62.1-44.19:7.

**Approval of portions of three TMDL Reports containing five TMDLs, and authorization to update the appropriate Water Quality Management Plans and Amendment of Water Quality Management Planning Regulation to incorporate five new waste load allocations:** Staff will ask the Board to approve amendments to two sections of the Water Quality Management Planning (WQMP) regulation, 9 VAC 25-720.50.A (Potomac-Shenandoah River Basin) and 9 VAC 25-720.130.A (New River Basin). The amendments consist of adding five new wasteload allocations because TMDL reports specifying these WLAs were recently approved by EPA, and there are no numeric criteria for the WLA parameters in Virginia's water quality standards regulation. The affected water bodies and localities are Lewis Creek (Augusta County), South Run (Fauquier County), and Chestnut Creek (Carroll and Grayson Counties).

The Clean Water Act ("CWA") and the U.S. EPA Water Quality Management and Planning Regulation (40 CFR §130) require states to identify waters that are in violation of water quality standards and to place these waters on the state's 303(d) List of Impaired Waters. Also, the CWA and EPA's enabling regulation require that a Total Maximum Daily Load ("TMDL") be developed for those waters identified as impaired. In addition, the Code of Virginia, §62.1-44.19:7.C, requires the State Water Control Board ("the Board") to develop TMDLs for impaired waters.

A TMDL is a determination of the amount of a specific pollutant that a water body is capable of receiving and still meet water quality standards for that pollutant. TMDLs are required to identify all sources of the pollutant and calculate the pollutant reductions from each source that are necessary for the attainment of water quality standards.

Every TMDL consists of three basic components. They are the point source component called the waste load allocation ("WLA"), nonpoint source component called the load allocation ("LA"), and the margin of safety component ("MOS"). The TMDL is equal to the sum of these three components.

The U.S. EPA's Water Quality Management and Planning Regulation 40 CFR §130.7(d)(2) directs the states to incorporate EPA-approved TMDLs in the state's Water Quality Management Plan. Also, U.S. EPA's Water Quality Management and Planning Regulation 40 CFR §122.44 (d)(1)(vii)(B) requires that all new or reissued VPDES permits be consistent with the TMDL WLA. This means that the WLA component of the TMDL will be implemented through the requirements specified in the VPDES permits, for example through effluent limitations. The Commonwealth is implementing the LA component using existing voluntary, incentive and regulatory programs such as the Virginia Agricultural Cost-Share Program and the Agricultural Stewardship Act. Specific management actions addressing the LA component are compiled in a TMDL implementation plan ("TMDL IP").

Staff will propose the following Board actions:

1. Approval of portions of three TMDL Reports containing five TMDLs, and authorization to update the appropriate Water Quality Management Plans:

- Lewis Creek (Augusta County), WLAs for sediment, lead, and polycyclic aromatic hydrocarbons (PAHs)
- South Run (Fauquier County), WLA for phosphorus
- Chestnut Creek (Carroll and Grayson Counties), WLA for sediment

2. Amendment of Water Quality Management Planning Regulation to incorporate five new waste load allocations: Because Virginia's water quality standards do not specify numeric criteria for phosphorus, sediment, lead or total PAHs, the five new WLAs must be adopted as part of the WQMP regulation. This process is specified in DEQ's "Public Participation Procedures for Water Quality Management Planning". Staff will therefore propose that the Board, in accordance with §2.2-4006A.4.c. and §2.2-4006B of the Code of Virginia, adopt amendments to the WQMP Regulation (9 VAC 25-720)

The TMDL reports for Lewis Creek, South Run and Chestnut Creek were developed in accordance with Federal Regulations (40 CFR §130.7) and are exempt from the provisions of Article II of the Virginia Administrative Process Act. These TMDL reports were subject to the TMDL public participation process contained in DEQ's Public Participation Procedures for Water Quality Management Planning that the Board approved in March 2004. Written comments provided by stakeholders as well as the Commonwealth's responses are submitted to EPA together with the TMDL reports and are made available on DEQ's web site under <http://www.deq.virginia.gov/tmdl/tmdlrrpts.html>



The proposed final amendments to the WQMP regulation for Lewis Creek, South Run and Chestnut Creek were published in the Virginia Register on October 3, 2006, with a public comment period ending on November 3, 2006. One public comment regarding the Lewis Creek TMDL was submitted by Environmental Resources Management on behalf of Columbia Gas of Virginia. The letter expressed concern about the TMDL possibly impeding ongoing progress under DEQ's Voluntary Remediation Program (VRP) at a Columbia Gas site in the Lewis Creek watershed. The response to this letter was coordinated with VRP staff and expressed DEQ's intent to continue its productive relationship with Columbia Gas under the VRP process.

At previous meetings, the Board voted unanimously to delegate to the DEQ Director the authority to approve TMDLs that do not require regulatory adoption of WLAs, as well as all TMDL IPs, provided that a summary report of the action the Director plans to take is presented to the Board prior to the Director approving the TMDL reports. Staff intends to utilize this delegation of authority for the approval of the fifteen bacteria TMDL reports and for the approval of the five TMDL IPs. The complete documents can be found on DEQ's web site at <http://www.deq.virginia.gov/tmdl>. Seven public comments in support of the proposed action were received.

**Report on Significant Noncompliance:** Six permittees were reported to EPA on the Quarterly Noncompliance Report (QNCR) as being in significant noncompliance (SNC) for the quarter ending September 30, 2006. The permittees, their facilities and the reported instances of noncompliance are as follows:

1. Permittee/Facility: Stafford County, Aquia Wastewater Treatment Facility  
Type of Noncompliance: Failure to Meet Permit Effluent Limits (Ammonia Nitrogen, Total Phosphorus, and Biochemical Oxygen Demand)

City/County: Stafford, Virginia

Receiving Water: Unnamed tributary to Austin Run

Impaired Water: Austin Run is listed on the 303(d) report as impaired for fecal coliform. The source of the contamination is unknown.

River Basin: Potomac-Shenandoah River Basin

Dates of Noncompliance: March, April, May and June 2006

Requirements Contained In: VPDES Permit

DEQ Region: Northern Virginia Regional Office

Staff of the Northern Virginia Regional Office have worked with the County to settle this matter. The County has recently executed a proposed consent special order, which addresses the referenced violations, and assesses a civil penalty. The order will be presented to the Board, for its approval, at its next quarterly meeting.

2. Permittee/Facility: Arlington County, Arlington County Water Pollution Control Plant

Type of Noncompliance: Failure to Meet Permit Effluent Limit (Total Phosphorus)

City/County: Arlington County, Virginia

Receiving Water: Four Mile Run

Impaired Water: Four Mile Run is identified in the 303(d) report as impaired waters for fecal coliform, e coli and fish tissue PCBs, however the source of the contamination is unknown.

River Basin: Potomac River Basin

Dates of Noncompliance: February and September, 2006

Requirements Contained In: VPDES Permit

DEQ Region: Northern Virginia Regional Office

Staff of the Northern Virginia Regional Office have evaluated this case and determined that formal enforcement action is not necessary. The County is currently upgrading and expanding the Plant under the terms of a consent special order issued in 2005. The upgrade is designed to enhance nutrient removal and to improve handling of high flows during rain events. A major portion of the upgrade is scheduled to be completed at the end of 2007.

3. Permittee/Facility: Town of Fredericksburg, Fredericksburg Wastewater Treatment Facility

Type of Noncompliance: Failure to Meet Permit Effluent Limit (Total Kjeldahl Nitrogen)

City/County: Town of Fredericksburg, Virginia

Receiving Water: Rappahannock River

Impaired Water: The Rappahannock River is listed on the 303(d) report as impaired because of fecal coliform levels and PCB contamination of fish tissues. The source of the contamination is unknown.



River Basin: Rappahannock River Basin  
Dates of Noncompliance: May and June, 2006  
Requirements Contained In: VPDES Permit  
DEQ Region: Northern Virginia Regional Office

A consent order addressing the referenced violations was approved by the Board at its December meeting

4. Permittee/Facility: Newport News Shipbuilding and Dry Dock Company, Newport News Shipbuilding Wastewater Treatment System

Type of Noncompliance: Failure to Meet Permit Effluent Limit (Total Residual Copper, outfalls 006, 008, 011, 020, 030 and 043)

City/County: Newport News, Virginia

Receiving Water: James River

Impaired Water: The James River is listed on the 303(d) report as impaired because of PCBs found in fish tissue, shellfish harvesting restrictions and lowered levels of benthic diversity. The source of the contamination is unknown.

River Basin: James River Basin  
Dates of Noncompliance: June and September 2006  
Requirements Contained In: VPDES Permit  
DEQ Region: Tidewater Regional Office

The staff of the Tidewater Regional Office have evaluated this case and determined that enforcement action is not necessary. During the summer of 2006 the permittee completed mixing zone studies that enabled regional permitting staff to raise copper effluent limitations. With one exception, the copper levels of the discharges cited in June and September are below the new permit effluent limits and so, staff determined, enforcement action would be unnecessary to ensure consistent compliance.

5. Permittee/Facility: Omega Protein, Inc., Omega Protein Wastewater Treatment Facility

Type of Noncompliance: Failure to Meet Permit Effluent Limit (Ammonia Nitrogen)

City/County: Northumberland County, Virginia

Receiving Water: Cockrell's Creek

Impaired Water: Cockrell's Creek is listed on the 303(d) report because of condemnation of shellfish beds due to the proximity of the beds to the Town of Reedville's sewage treatment plant discharge.

River Basin: Chesapeake Bay  
Dates of Noncompliance: August and September, 2006  
Requirements Contained In: VPDES Permit  
DEQ Region: Piedmont Regional Office

Staff of the Piedmont Regional Office have drafted a penalty order addressing this matter and hope to present it to the Board for approval at its next quarterly meeting.

6. Permittee/Facility: U.S. Marine Corps, Quantico Marine Base, Quantico Industrial Wastewater Treatment Facility

Type of Noncompliance: Failure to Meet Permit Effluent Limit (Instantaneous Residual Max Chlorine)

City/County: Quantico, Virginia

Receiving Water: Unnamed tributary to the Potomac River

Impaired Water: Although the unnamed tributary is not listed on the 303(d) report, the bodies of water into which it flows are listed because of fecal coliform, e coli and PCB fish tissue contamination. The source of the contamination is unknown.

River Basin: Potomac and Shenandoah River Basins  
Dates of Noncompliance: July and August, 2006  
Requirements Contained In: VPDES Permit  
DEQ Region: Northern Virginia Regional Office

Marine Corps staff have indicated that the violations were caused by a broken water main, which has since been fixed. That being the case, and no environmental damage having been reported due to the violations, staff of the Northern Virginia Regional Office do not believe that formal enforcement action is warranted.

**Hot Springs Regional STP, Bath County Service Authority, Hot Springs - Consent Special Order with civil charge:** The Hot Springs Regional STP Facility (Hot Springs or Facility), owned and operated by the Bath County Service Authority (BCSA), is the subject of a VPDES Permit. BCSA conducted significant maintenance at the Facility from April 3 through April 5, 2006, which involved periodic shut-downs as BCSA replaced electronic panel box controls. High chlorine concentrations occurring during this time were attributed by the BCSA to these maintenance activities. On April 6, 2006, a restart of pumps after extended shutdown caused a wastewater surge and overflow of highly chlorinated wastewater into Hot Springs Run. BCSA personnel visually checked downstream to observe any problems after the overflow and noted no problems. BCSA notified DEQ that an overflow had occurred. During a follow-up inspection, BCSA personnel noted that approximately 30 to 40 finger-length minnows were found dead in the stream. BCSA reported the fish kill and chlorine release to DEQ. BCSA was issued a Notice of Violation (NOV) on May 22, 2006 for the reported fish kill, and was subsequently issued another NOV on June 9, 2006 for the reported chlorine violations. BCSA agreed to enter into the Order and pay civil charges for the chlorine exceedence, unpermitted discharge of wastewater, and associated fish kill. The proposed Order was signed and agreed to by an authorized BCSA official on November 16, 2006. Civil Charge: \$3,500

**Johnny R. Mays, 264 Front Street, Lovingson, Nelson County - Consent Special Order w/ Civil Charges:** Johnny R. Mays previously owned an underground storage tank (UST) facility located at 264 Front Street, Lovingson, Virginia. Mr. Mays stored petroleum in these USTs under the requirements of 9 VAC 25-580-10 et seq. Underground Storage Tanks: Technical Standards and Corrective Action Requirements (UST Regulation). The UST Regulation requires that owners of UST facilities protect USTs from corrosion, perform release detection on the USTs, properly register the USTs, properly close non-compliant USTs, and maintain compliance records for DEQ review. A July 28, 2005, inspection of the facility revealed that Mr. Mays had failed to: 1) protect metallic portions of the UST piping from corrosion, 2) perform release detection on the USTs, 3) maintain compliance records available for review by DEQ staff, and 4) comply with the requirements for financial assurance for the USTs. DEQ issued a Warning Letter (WL) to Mr. Mays on August 31, 2005. Mr. Mays signed a Letter of Agreement (LOA) with DEQ on January 5, 2006, requiring compliance by March 31, 2006. The owner failed to comply. A Notice of Violation (NOV) was issued to Mr. Mays on June 8, 2006. The Consent Special Order was signed on November 7, 2006, to resolve the past violations of the UST regulation and provide that the USTs would be closed. DEQ staff received closure documentation on October 20, 2006, indicating closure had been completed without finding evidence of a petroleum release, effectively resolving the remaining deficiencies for the USTs. Civil Charge: \$1,738

**Increase to the Annual VCWRLF Loan Administration Fee:** Section 62.1-225 of Chapter 22, Code of Virginia, authorizes the Board to approve a reasonable fee for the administration and management of the Virginia Clean Water Revolving Loan Fund. Staff is recommending that the Board increase the administrative fee from 0.1% to 0.2% for all new ceiling rate projects. In 2004, the Board established an annual administrative fee of 0.1% on all new ceiling rate loans from the VCWRLF. Due to the decreasing federal funds available for administration, coupled with an increasing workload from new projects, there is a need to increase the fee to provide adequate revenues for program administration.

Federal SRF regulations allow the use of no more than 4% of the annual capitalization grant DEQ receives from EPA for covering the state's administrative costs for the program. In anticipation of declining federal appropriations, coupled with an increasing workload from loans funded through repayments and leveraged bond proceeds, the Board established a 0.1% administrative fee for ceiling rate projects in 2004. The fee is exclusive of the rate subsidy provided under the applicable ceiling rate such that localities do not pay an effective rate of interest any greater than the established ceiling rate. For example in 2007, the ceiling rate established by the Board was 3.0 %; with 2.9% being returned to the Fund and 0.1% going into an administrative fee account. The Fund essentially absorbs the fee and borrowers do not incur additional costs.

With federal appropriations decreasing at a rate greater than anticipated, the amount of funds available for program administration has dropped to an unsustainable level. Funds available for administration through the EPA grant have fallen from approximately \$1.1 million in 2004 to only \$700,000 in 2006 with further significant cuts anticipated. The staff believes that an increase in the fee to 0.2% is necessary in order to cover

the administrative costs for the program. This rate is less than half of what the Virginia Department of Health applies to their Drinking Water SRF loans (0.5%) and is below the rates in most states in the country. It is projected that this increase will result in a return to the \$1.1 million availability level by 2012, about the time federal funding is expected to cease. The change would be transparent to the VCWRLF borrowers. Using the example above, localities would still be paying the ceiling rate of 3.0% but 2.8% would be returned to the Fund with 0.2% going into an administrative fee account to cover administrative expenses.

Staff Recommendations: Authorize an increase in the VCWRLF administrative fee from 0.1% to 0.2%.

**Results of 2006 Water Quality Assessment:** The 2006 Virginia Water Quality Assessment designates a significant portion of the Commonwealth's rivers, lakes and bays as impaired because they do not meet water quality standards. The water quality standards are established to protect drinking water supplies, aquatic life, production of edible and marketable fish and shellfish, wildlife and recreational uses of state waters, including swimming, boating, fishing and shellfish harvesting. The impaired waters in Virginia include the following:

Virginia Waters - Types and Dimensions	Impaired Waters - 2006 Assessment	Top Reasons for Impairments	Uses Lost or Impaired
Rivers - 50,356 miles	9,002 miles	High Bacteria Levels	Recreational
Lakes - 116,054 acres	109,201 acres	Low dissolved oxygen and high PCB levels in fish tissue	Aquatic Life and Edible Fish
Estuaries - 2,425 sq. miles	2,212 sq. miles	Low dissolved oxygen (nutrient pollution) and high PCB levels in fish tissue	Aquatic Life and Edible Fish and Shellfish

New impairments were identified in 2006, primarily due to DEQ's assessment of waters which had not previously been monitored, or due to the adoption of more stringent water quality criteria. While 2,071 additional impaired river miles were added to the 2006 list, the good news is that 411 river miles were removed from the list because the 2006 assessment showed that these waters, previously listed as impaired, were now meeting water quality standards.

Citizens can access a searchable, electronic version by going to <http://gisweb.deq.virginia.gov/> and selecting "2006 Impaired Waters" from the pull-down menu.

The 2006 Water Quality Assessment Report was approved by EPA on October 16, 2006. Virginia was the first state in EPA Region 3 to get its 2006 assessment report approved. We were also the first state in the region to gain approval in both 2002 and 2004.

Work has begun on developing the guidelines for conducting the 2008 Water Quality Assessment which is due April 1, 2008.